GAO's Use of DAMIR

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GAO

- Works for Congress
- Evaluates Executive Branch Programs
- Employs about 3,200 people

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- Defense Capabilities & Management
- International Affairs & Trade
- Information Technology
- Financial Management
- Tax & Justice
- Financial management & Community Investment
- Health Care Initiatives
- Physical Infrastructure
- Natural Resources & Environment
- Education, Welfare, & Income Security

On What DAMIR Data Does GAO Focus?

- Executive Summary
- Breach & Rebaseline Data
- Cost, Schedule, Quantity Data
- Funding Stream

For What Does GAO Use DAMIR Data?

- Individual Weapon System Reviews
- Annual 2-page Assessments of MDAPs
- Macro Analysis of Major Acquisition Trends
- Internal Strategic Planning

Caution

- The examples that follow are taken from different presentations given over the past four years.
- Analsyis using updated data could yield different results.

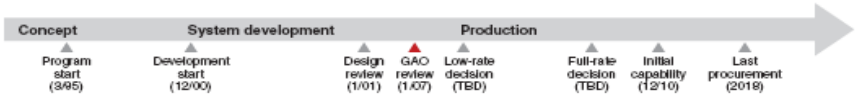
Annual Assessment: EFV Program Example

Common Name: EFV

Expeditionary Fighting Vehicle (EFV)

The Marine Corps' EFV is designed to transport troops from ships offshore to their inland destinations at higher speeds and from longer distances than the system it is designed to replace, the Assault Amphibious Vehicle 7A1 (AAV-7A1). The EFV will have two variants—a troop carrier for 17 combat-equipped Marines and 3 crew members and a command vehicle to manage combat operations in the field. We assessed both variants.

Source: General Dynamics Land Systems.



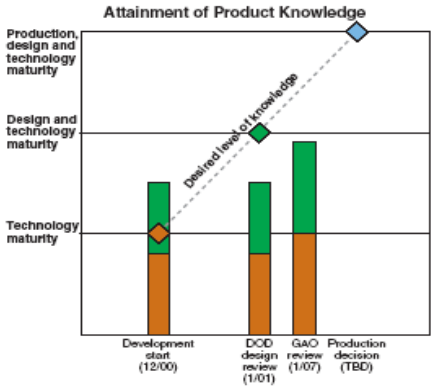
Program Essentials

Prime contractor: General Dynamics
Program office: Woodbridge, Va.
Funding needed to complete:
R&D: $502.3 million
Procurement: $8,546.8 million
Total funding: $9,107.5 million
Procurement quantity: 1012

Program Performance (fiscal year 2007 dollars in millions)

	As of 12/2000	Latest 08/2006	Percent change
Research and development cost	$1,518.9	$2,415.6	59.0
Procurement cost	$6,811.9	$8,748.5	28.4
Total program cost	$8,418.2	$11,254.9	33.7
Program unit cost	$8.213	$10.980	33.7
Total quantities	1,025	1,025	0.0
Acquisition cycle time (months)	138	189	37.0

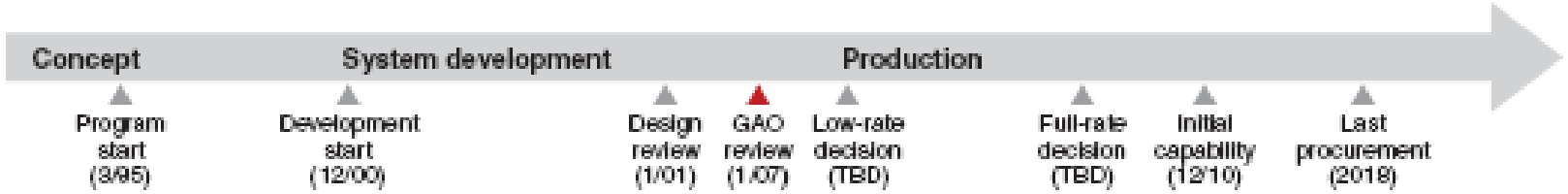
The EFV's technologies are mature and the system design was thought to be stable. Given the recent discovery of problems associated with reliability, a decision on how to proceed is pending by the Marine Corps that could significantly impact the program cost, schedule, and quantity parameters. Congress recently zeroed out the EFV's fiscal year 2007 procurement budget request and directed that the EFV program extend its development phase. Further, growth in the number of lines of software code needed for the EFV vehicle continues and could contribute to the already escalating program cost growth.



Source: GAO-07-406SP

2007 EFV Annual 2-Page Assessment

DAMIR Schedule, Cost, Quantity & Funding Stream



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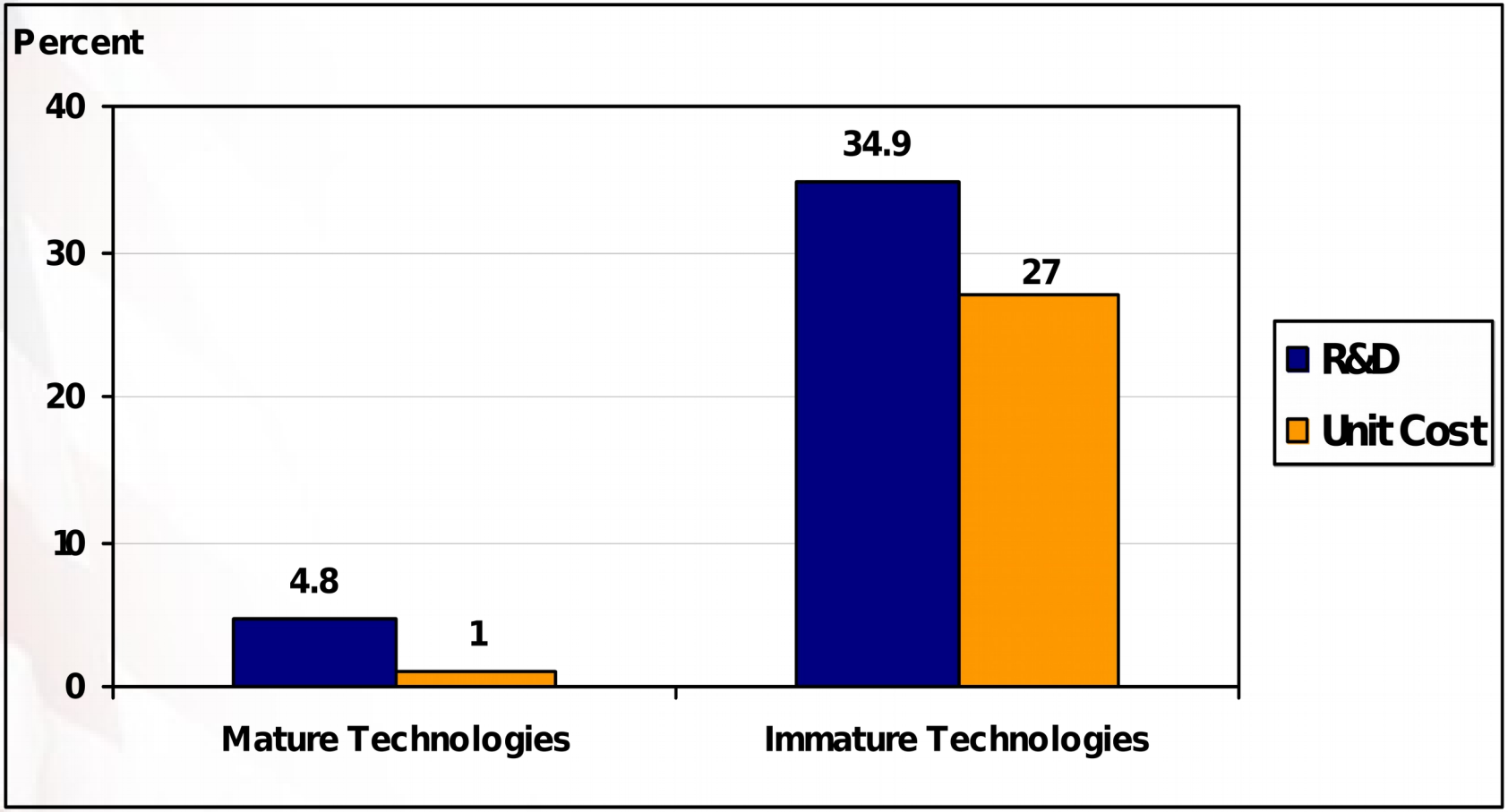
Source: Defense Acquisitions: Assessments of Selected Major Weapon Programs. GAO-07-406SP. Washington, DC.: March 2007.

Macro: Consequences of Carrying Immature Technologies Into System Development

Average RDT&E and Unit Cost Growth From First Full Estimate



Source: Defense Acquisitions: Assessments of Selected Major Weapon Programs. GAO-06-391. Washington, DC.: March 2006.

Macro Analysis: Changing Conditions

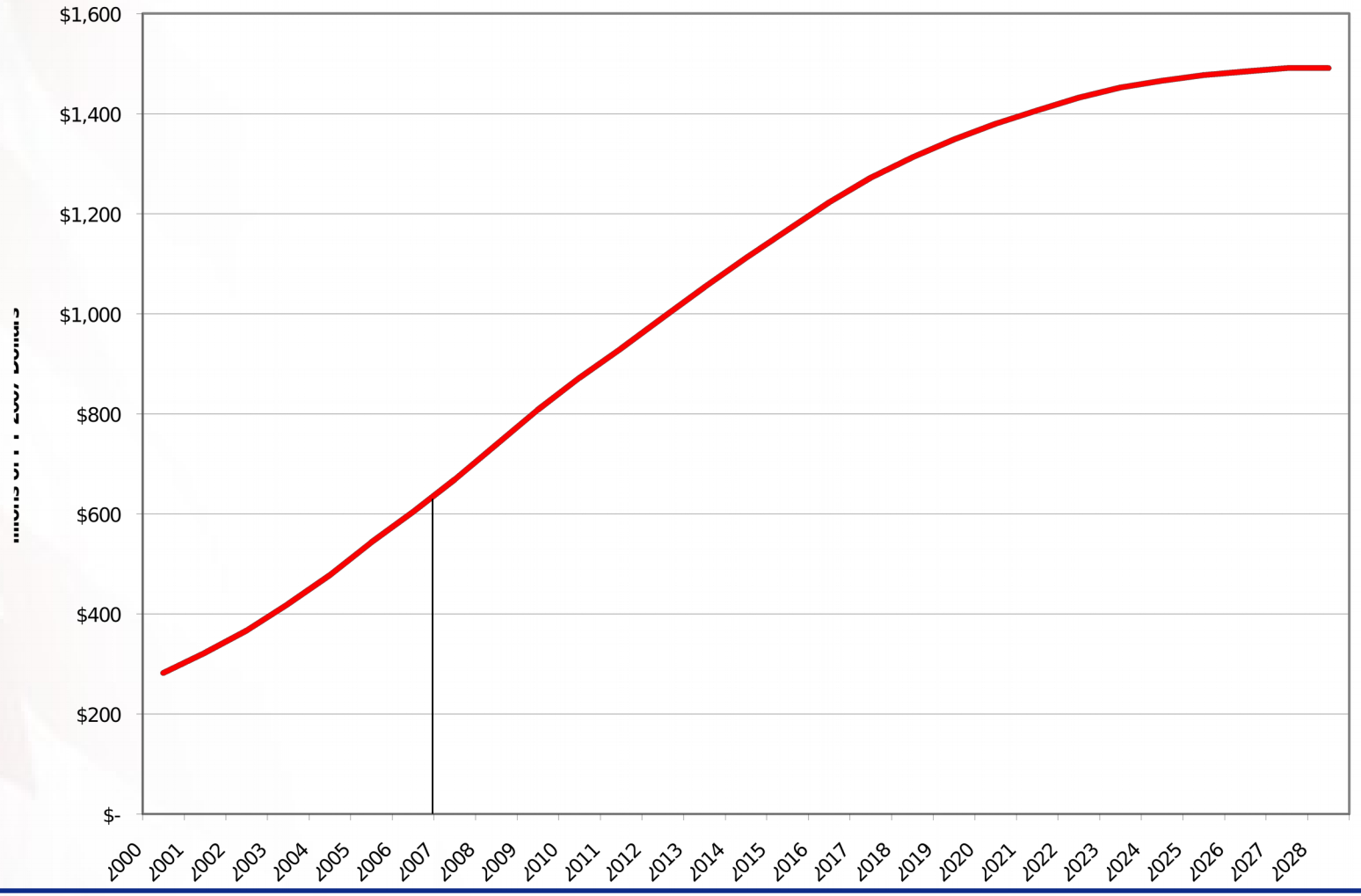
- **In 2001, the top five weapon systems were projected to cost about $291 billion combined;**
- **In 2006, the top five weapon systems were projected to cost about $550 billion.**

2001		2006	
Program	**Cost**	**Program**	**Cost**
F-22A Raptor aircraft	$65.0 billion	Joint Strike Fighter	$206.3 billion
DDG-51 class destroyer ship	$64.4 billion	Future Combat Systems	$127.5 billion
Virginia class submarine	$62.1 billion	Virginia class submarine	$80.4 billion
C-17 Globemaster airlift aircraft	$51.1 billion	DDG-51 class destroyer ship	$70.4 billion
F/A-18E/F Super Hornet fighter aircraft	$48.2 billion	F-22A Raptor aircraft	$65.4 billion
Total	**$290.8 billion**	**Total**	**$550.0 billion**

Source: Defense Acquisitions: Assessments of Selected Major Weapon Programs. GAO-06-391. Washington, DC.: March 2006.

Macro Analysis: Bow Wave

Total Cumulative Expenditures on Current Portfolio of Major Defense Acquisition Programs



Source: GAO-07-406SP -- GAO Analysis of DOD data. (MDA investment data only goes through FY 2011 and does not include full cost of developing MDA systems.)

Macro Analysis – Performance past 3 years

- Since 2004, total costs for a common set[4] of 64 major weapon systems under development have grown in real terms by 4.9 percent per year—costing $165 billion (constant 2007 dollars) more in 2007 than planned for in 2004.

- Over this same period, the funding needed to complete these programs has increased despite the significant investment that has already been made.

- [4]This common set refers to all programs that were reported as major defense acquisition programs in both the 2002 and 2005 SARs.

Source: Defense Acquisitions: Assessments of Selected Major Weapon Programs. GAO-07-406SP. Washington, DC.: March 2007.

Macro: Cost & Schedule

- **The majority of the programs in our annual assessment are costing more and taking longer to develop than estimated.**

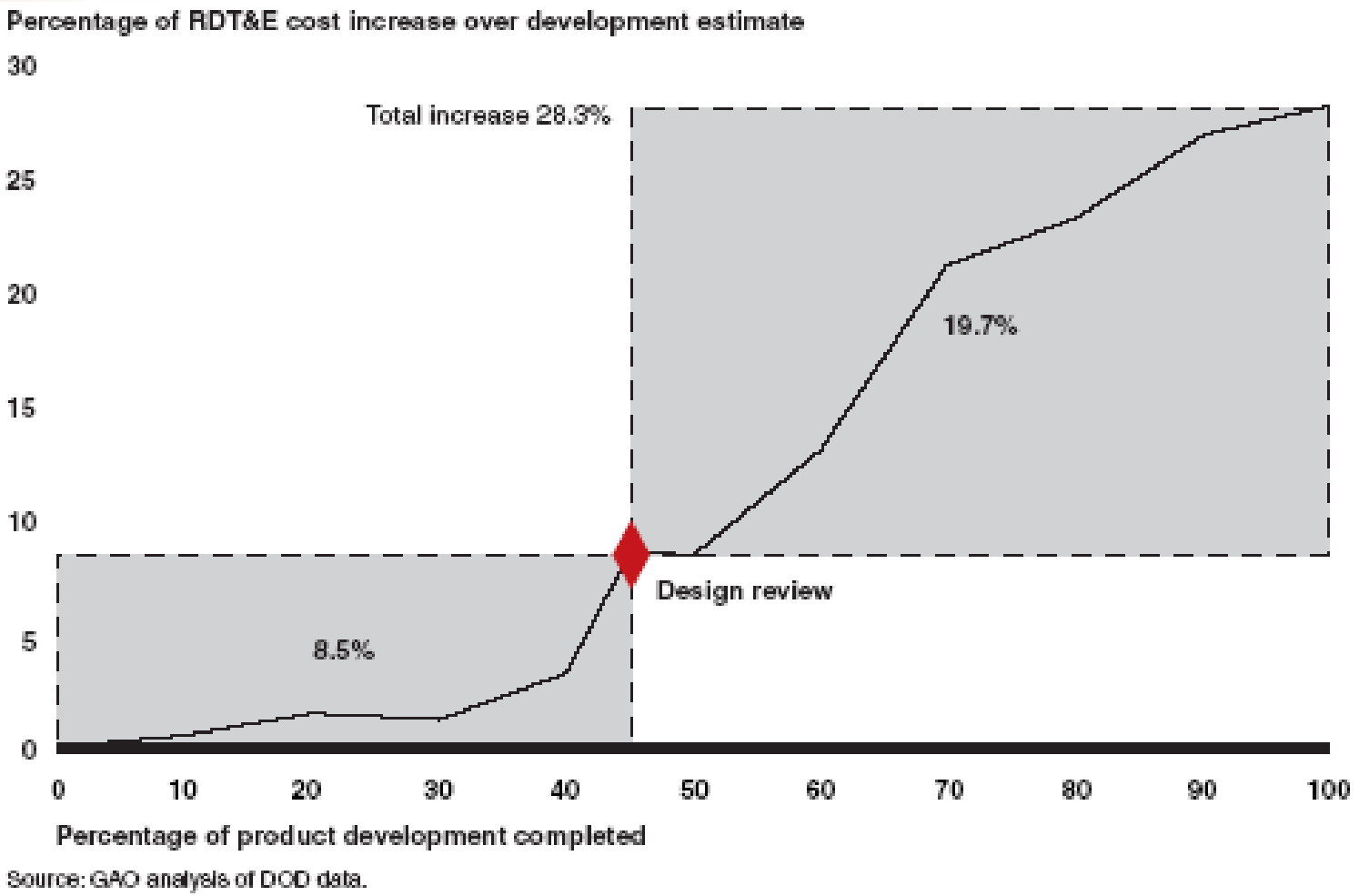
Cost and cycle time growth for 27 weapon systems

Business Case (since development began) in 2007 Dollars

	First Full Estimate	Latest Estimate	Percent Change
Total Cost	$506.4	$603.1	**19.1**
RDT&E Cost	$104.7	$139.7	**33.5**
Acquisition Cycle time	138 months	170 months	**23.5**

Source: GAO-07-406SP

Macro: R&D Cost Growth & CDR



Source: GAO analysis of DOD data.

Source: Defense Acquisitions: Assessments of Selected Major Weapon Programs. GAO-06-391. Washington, DC.: March 2006.

Macro: Practice Not Followed Policy

- While policy has been strengthened, controls are lacking to ensure decisions made throughout product development are informed by demonstrated knowledge. Programs that don't measure up are approved.
- Despite the evolutionary acquisition policy, approved solutions favor grand designs and complex systems of systems with accelerated schedules:

Program	Immature Technologies	Length of SDD
F/A-22	***3***	***10 yrs.***
FCS	53	9 yrs.
DD(X)	10	7 yrs.
TSAT	6	4 yrs.
JSF	8	6 yrs.
JTRS (#1)	20	4 yrs.
Global Hawk	9	7 yrs.
WIN-t	9	3 yrs.

Macro: Performance Under New Policy

The cost and schedule outcomes being achieved by development programs initiated since DOD first issued its revised policy have not improved over those achieved by programs managed under prior versions of the policy.

Table 2: Cost and Schedule Outcomes for 6 of the 10 Largest Development Programs Sorted by Percent of System Development Remaining

Programs	Percent development cost growth	Delay in delivery of initial capability in months	Percent of development remaining
Aerial Common Sensor	45%	24	85%
Future Combat System	48%	48	78%
Joint Strike Fighter	30%	23	60%
Expeditionary Fighting Vehicle	61%	48	49%
C-130 Avionics Modernization Program	122%	Delays anticipated due to program restructure	Undetermined due to program restructure
Global Hawk (RQ-4B)	166%	Delays anticipated due to program restructure	Undetermined due to program restructure

Sources: DOD (data); GAO (analysis and presentation).

Source: GAO-07-406SP

Frequency of Rebaselining Is Not Reported

Many programs rebaseline more than once during the life of the program. The annual SAR shows only the latest rebaseline.

Programs	Year of Program Start	Number of Rebaselines
Joint Stars	1990	7
JSOW Unitary	1995	6
FMTV	1988	7
Javelin	1989	6
SSN-21	1988	10
Strategic Sealift	1993	7
DDG 51 Destroyer	1988	11
SM-2 Block IV	1993	11
V-22 Osprey	1988	8
F/A-22	1992	14

Source: GAO analysis of DOD data

Full History of Changes to Cost is Not Reported

Programs*	Reported to Congress		Not Reported to Congress	
	% APUC change	time elapsed (in months)	% APUC change	time elapsed (in months)
ASDS	-(.94)	5	329.75	111
AAWS-M	4.14	34	207.87	174
FMTV	-(4.67)	7	154.52	177
USMC H-1 Upgrades	-.98	20	101.52	87
V-22 Vertical Lift Aircraft	6.00	20	132.46	212
F/A-22	-.33	-4	72.4	143

*We selected acquisition category 1C and 1D programs with the largest APUC increase when comparing the current estimate with the initial acquisition program baseline.

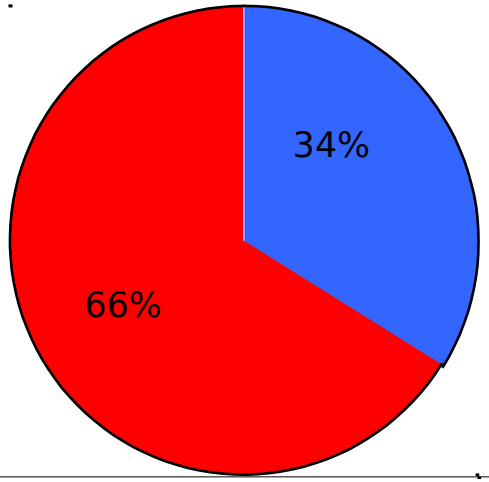
Source: GAO analysis of SAR data (GAO-05-182)

Congress Is Not Receiving the Most Timely Information

Historical Representation of System Rebaselines (1996 - 2003)
(Calendar Year)

April – December

138 Rebaselines



January – March

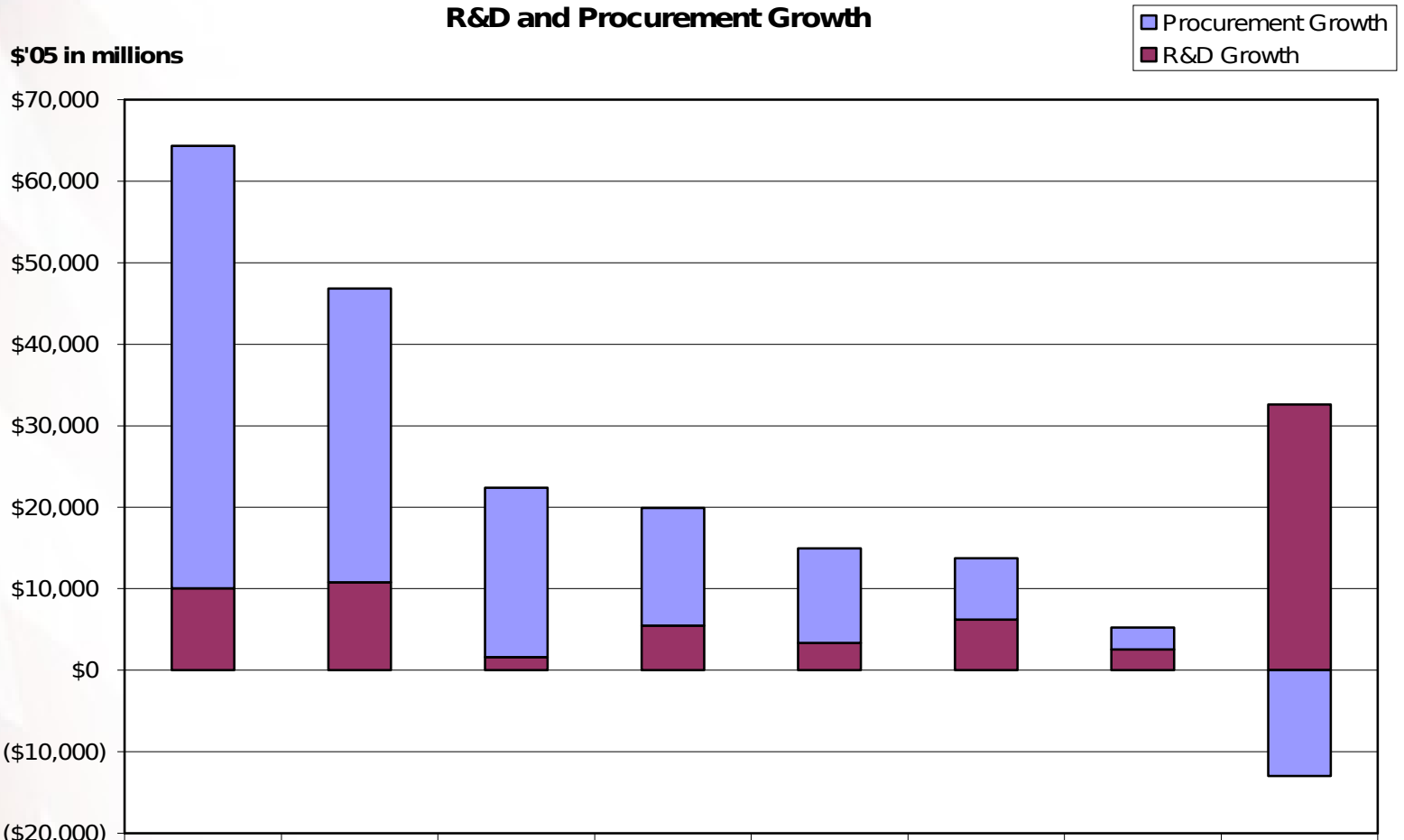
71 Rebaselines

About two-thirds of rebaselines may not be reported until the next annual December SAR the following April.

Source: Prepared by GAO from DOD Documents

Source: GAO-05-182

Internal Strategic Planning



	Ships	Combat Vehicles	Submarines	Space	Missiles & Munitions	Helicopters	C3I	Aircraft
Procurement Growth	$54,313.59	$36,018.34	$20,800.32	$14,423.32	$11,636.45	$7,518.21	$2,667.45	($12,962.41)
R&D Growth	$10,033.79	$10,787.04	$1,583.81	$5,485.15	$3,329.47	$6,216.27	$2,578.34	$32,602.43

Source: 2003 SARs vs First Full Estimate

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